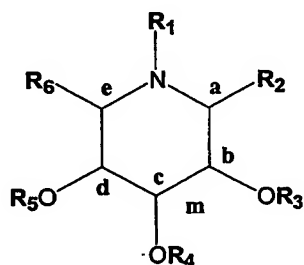


Claims

1. Deoxynojirimycin analogue, or a pharmaceutically acceptable salt thereof, having the general structure (I)

(I)



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wherein

R_1 - R_5 each independently comprise H or $(CH_2)_nCH_3$ or X;

R_6 comprises H, CH_2OH or CH_2OX ;

M is 0 or 1;

10 N is 0-9;

a, b, c, d, e are chiral centra having an R or S configuration;

and X comprises a large hydrophobic moiety and a spacer, whereby the hydrophobic moiety is linked through the spacer to the nitrogen atom or carbon atom concerned, and wherein the large hydrophobic moiety is derived from a polycyclic alcohol containing three or more rings each sharing two or more carbon atoms with another ring and is capable of inserting in lipid bilayers.

2. Deoxynojirimycin analogue, or a pharmaceutically acceptable salt thereof, according to claim 1, wherein the large hydrophobic moiety is linked to said nitrogen atom of the deoxynojirimycin by means of a spacer comprising an alkoxy polyalkylene or polyalkylene chain of from 3 to 8 carbon atoms.

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3. Deoxynojirimycin analogue, or a pharmaceutically acceptable salt thereof, according to claim 1 or 2, wherein the large hydrophobic moiety is derived from a compound selected from the group consisting of adamantanemethanol, cholesterol, β -cholestanol, adamantanol and 9-hydroxyphenanthrene.

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4. Deoxynojirimycin analogue, or a pharmaceutically acceptable salt thereof, according to any one of claims 1-3, having the ido-configuration.

5. Deoxynojirimycin analogue comprising ido-N-(5-adamantane-1-yl-methoxy-pentyl)deoxynojirimycin, or a pharmaceutically acceptable salt thereof.

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6. Deoxynojirimycin analogue according to any one of claims 1-5 for use in the treatment of a disease involving increased levels of glucosylceramide and glucosphingolipids.

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7. Deoxynojirimycin analogue according to any one of claims 1-5 for use in the treatment of a disease involving increased levels of glucosylceramide, glucosphingolipids and glucosidases.

8. Dexynojirimycin analogue according to claim 6 for use in the treatment of Gaucher disease.

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9. Dexynojirimycin analogue according to claim 6 for use in the treatment of an inflammatory disease.

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10. Dexynojirimycin analogue according to claim 6 for use in the treatment of hyperpigmentation and/or inflammatory skin conditions.

11. Dexynojirimycin analogue according to claim 6 for use in the treatment of a fungal disease.

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12. Dexynojirimycin analogue according to claim 6 for use in the treatment of overweight and obesity.
- 5 13. Dexynojirimycin analogue according to claim 6 for use in the treatment of lysosomal storage disorders.
14. Dexynojirimycin analogue according to claim 6 for use in the treatment of melanoma and other tumors.
- 10 15. Dexynojirimycin analogue according to claim 6 for use in the treatment of a microbacterial infection.
- 15 16. Dexynojirimycin analogue according to claim 7 for use in the treatment of insulin resistance.
17. Pharmaceutical composition comprising a deoxynojirimycin analogue, or pharmaceutically acceptable salt thereof, according to any one of claims 1-5 and a pharmaceutically acceptable carrier.
- 20 18. Method of treatment of an individual suffering from a disease selected from the group consisting of insulin resistance, Gaucher disease, inflammatory diseases, hyperpigmentation and/or inflammatory skin conditions, overweight and obesity, lysosomal storage disorders, fungal diseases, melanoma and other tumors, and microbacterial infections, comprising administering to said individual an effective amount of the pharmaceutical composition according to claim 17.
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